Aircraft

Aircraft Profile

The aircraft uses a dedicated DJI industrial flight controller to provide multiple operation modes for various applications. The Spherical Radar System provides terrain following and obstacle circumvention in all horizontal directions as well as obstacle sensing in all horizontal directions and upward direction. The aircraft comes equipped with other functions such as operation resumption, system data protection, empty tank warning, low battery level warning, and RTH.

Flight Modes

The aircraft will fly in P-mode by default. Users can switch between flight modes by toggling the Flight Mode switch on the remote controller when A-mode is enabled in the app.

P-mode (Positioning): The aircraft utilizes GNSS or the RTK module for positioning. When the GNSS signal is strong, the aircraft uses GNSS for positioning. When the RTK module is enabled and the differential data transmission is strong, it provides centimeter-level positioning. It will revert to A-mode when the GNSS signal is weak or when the compass experiences interference.

A-mode (Attitude): GNSS is not used for positioning and the aircraft can only maintain altitude using the barometer. The flight speed in A-mode depends on its surroundings such as the wind speed.

Attitude Mode Warning

In A-mode, the aircraft cannot position itself and is easily affected by its surroundings, which may result in horizontal shifting. Use the remote controller to position the aircraft.

Maneuvering the aircraft in A-mode can be difficult. Avoid flying in confined spaces or in areas where the GNSS signal is weak. Otherwise, the aircraft will enter A-mode, leading to potential flight risks. Land the aircraft in a safe place as soon as possible.

Operation Modes

The T10 provides Route, A-B Route, Manual, and Manual Plus operation modes. Users can use DJI Agras to switch between A-B Route, Manual, and Manual Plus.

Route Operation Mode

After the task area and obstacles have been measured and settings have been configured, the DJI Agras app uses the built-in intelligent operation planning system to produce a task route based on the input of the user. Users can invoke an operation after planning a field. The aircraft will begin the operation automatically and follow the planned task route. Once prescription maps are added during field planning or editing, the aircraft performs variable rate fertilization according to the information included in the maps. Connection routing, operation resumption, altitude stabilization, obstacle avoidance, and obstacle circumvention are available in Route Operation mode. Use the app to adjust the spray amount and flight speed. Route operation mode is recommended for large spray areas.

Importing Prescription Maps

Import prescription maps to the remote controller first in order to perform variable rate fertilization.

1. Store the prescription tasks planned in DJI Terra to a microSD card.
2. Insert the microSD card to the remote controller, go to the home screen in DJI Agras. Select the files in the prompted window and import.
3. Imported prescription maps will be displayed in the Prescription Map tag on the task management screen.

Field Planning

DJI Agras supports multiple planning methods for various applications.

Walk with RC

Users should walk along the boundary of the field or the obstacles with the remote controller for measurements. Make sure that the aircraft is powered off when planning your flight route.

1. Power on the remote controller and enter DJI Agras. Tap Plan Field and select Walk with RC.
2. Wait until the GNSS signal is strong. Positioning accuracy may vary by +/- 2 meters.

Plan a field by following the instructions for walking with the remote controller below. Users can also enter the Field Editing screen and use the crosshair to add boundary points and obstacles. Refer to the Field Editing section for more information.

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3. Walk with the remote controller alongside the boundary of the task area and tap Add Waypoint C2 or press the C2 button on the remote controller at turning points.
4. Mark any obstacles:

   Use one of the two methods below to mark any obstacles in or out of a target field. Obstacles that are marked outside of the task area during field planning will be avoided when planning a connection route for Connection Routing. Refer to Connection Routing for more information.

   ① Tap Obstacle Mode C1 onscreen or press the C1 button on the back of the remote controller. Next, walk with the remote controller around the obstacle and tap Add Obstacle C2 onscreen or press the C2 button to add points for the obstacle. Finally, tap Waypoints Mode C1 or press the C1 button when finished.

   ② Tap Obstacle Mode C1 onscreen or press the C1 button on the back of the remote controller. Next, walk with the remote controller to the obstacle, and then tap Round. A red circle will appear on the map. Tap the center of the circle to select the obstacle and drag to adjust the position. Select the red point on the circumference of the obstacle and drag to adjust the radius. Finally, tap Waypoints Mode C1 or press the C1 button when finished.
5. Continue measuring the field by walking with the remote controller alongside the boundary and adding waypoints at each corner of the field. Tap Done when the field has been measured and all obstacles have been marked. The app produces a flight route according to the perimeter and obstacles of the field.
6. Add prescription map: tap ⊕ on the screen and select a prescription map from the list for a preview. Each area of the field on the map will be displayed in a color corresponding to the amount of material. Tap Yes to apply the selected prescription map to the field included in the map. Users can also add a prescription map while editing a field or before performing an operation.
7. Calibration points can be added when Rectify Offset is enabled in ••• under ⚙.
   Add calibration point: Walk with the remote controller to the location of each calibration point. Tap Calibration Point onscreen.

   The calibration points are used to offset the bias of the flight route caused by the positioning difference. Choose at least one existing landmark as the fixed reference point for calibration when executing the same operation. If none are available, use an easily identifiable object such as a metal stake.

Walk with RTK

Users record measurements while walking with the RTK dongle connected to the remote controller. Note that the RTK dongle is sold separately. Make sure that the aircraft is powered off when planning a flight route.

1. Make sure that the RTK dongle is mounted to the remote controller.
2. Power on the remote controller, slide from the top of the screen, and make sure that USB is disabled.
3. Go to the home screen in the app, tap Plan Field, and select Walk with RTK.
4. Go to ⚙, tap RTK to select the RTK source, and complete configuration. Wait until the system status bar in the upper left corner of the screen turns green, indicating that RTK positioning is in use. Complete the remaining steps by walking with the remote controller following the same instructions as the Walk with RC section.

Fly the Aircraft

Users can fly the aircraft to desired positions and use the app or the remote controller to add waypoints for outlining areas and measuring obstacles.

1. Power on the remote controller, enter DJI Agras, and then power on the aircraft.
2. Tap Plan Field and select Fly the Aircraft. Complete the remaining steps by flying the aircraft following the same instructions as the Walk with RC section.

DJI Terra

1. Make sure to read the DJI Terra User Manual for field planning before sharing the planned data to DJI AG platform or storing the data to the microSD card in the remote controller.
2. Using the planning data
   a. Download from the DJI AG platform:
      To view the data on the platform, go to the home screen of DJI Agras and tap 📋 to synchronize data. Select the desired data for field editing.
   b. Import from the microSD card:
      Insert the microSD card with the planning data from DJI Terra into the microSD card slot on the remote controller. Next, go to the home screen of DJI Agras. Select the data in the prompted window and import it. To view the data, go to 📋 task management on the home screen. Select the desired data for field editing.

Field Editing

Tap Field Editing on the onscreen map to enter Edit Status.

1. Edit Waypoints
   Move: tap the waypoint once and then drag to move.
   Fine Tuning: tap the waypoint. In the Waypoints tag in Field Editing, and tap Fine Tuning buttons. Tap Previous or Next to switch between different waypoints.
   Delete: tap the 🗑 icon in the Waypoints tag or tap the waypoint twice to delete a selected waypoint.
2. Adjust Route
   The following parameters can be adjusted on the map.
   Route Direction: tap and drag the ◎ icon near the route to adjust the flight direction of the planned route. tap the icon to show the Fine Tuning menu and adjust.
   The following parameters can be adjusted under the Route tag in Field Editing settings.
   Widen Overall Margin: adjust the safety margin between the route and the edge of the field.
   Widen One Side: tap any edge of the field, then enable this option and adjust the single safety margin for the corresponding edge. tap Previous or Next to switch between different edges.
   Route Spacing: adjust the route spacing between two neighboring lines. If Auto Route Spacing Adjustment is enabled in Advanced Settings under Aircraft Settings, fine tuning is applied

automatically after users adjust the value of the spacing. This will make the route more suitable for the task area. The spacing value displayed may vary slightly from the user input.

Obstacle Edge Safety Distance: adjust the safety margin between the route and the edge of the obstacle.

Auto Boundary Route: once enabled, the aircraft will fly and spray around the boundary of the field after the original task route is completed. Afterward, the aircraft will perform the preset action for when the task route is completed. The boundary route can be set to clockwise or counterclockwise.

Low Speed Ascent: when enabled, the aircraft will ascend by the preset height amount if flying at a low speed to maintain a safe distance from the ground and avoid damaging vegetation. The aircraft normally flies at a low speed when turning on a task route. The aircraft will automatically descend once the flight speed returns to normal.

3. Edit Obstacles
   For polygonal obstacles, follow the Edit Waypoints instructions to edit the added points around the obstacle. For circular obstacles, tap the center of the circle to select the obstacle and drag to adjust the position. Select the red point on the circumference of the obstacle and drag to adjust the radius.
4. Add More Boundary Points or Obstacles
   On the Field Editing screen, use the crosshair, remote controller, or aircraft to add more boundary points or obstacles. The instructions below use the crosshair as an example.

A more accurate map is required to add points using the crosshair. It is recommended to select a map source in HD Second-layer Map in ••• under ⚙ to improve the accuracy of the added points.

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   a. Select Crosshair in the Add Point list on the right of the screen. A crosshair will be displayed in the center of the map.
   b. Select Boundary Point, Obstacle, or Round from the Type of Point list. Drag the map to align the crosshair and tap Add to add the corresponding type of point.
   c. Follow the Edit Waypoints and Edit Obstacles instructions to edit the added points accordingly.
5. Add Prescription Maps
   Tap ⊕ on the screen. Select a prescription map from the list to preview. Each area of the field on the map will be displayed in a color corresponding to the amount of material. Tap Yes to apply the selected prescription map to the field.
6. Tap Back, then Done, name the operation, choose crop, and configure other parameters.

Performing an Operation

1. Power on the remote controller and aircraft.
2. Go to the home screen in DJI Agras and tap Execute Operation to enter the Operation View.
3. Tap ☰ to select a field in Fields tag.
4. Tap ⊕ on the center of the field to add a prescription map.
5. Tap Edit to edit the waypoints and route again and add more boundary points or obstacles.
6. Tap Invoke.
7. Tap Move Flight Route to adjust the position of the route using the fine-tuning buttons if Rectify Offset is disabled under ••• Settings. If Rectify Offset is enabled under ••• Settings, place the aircraft at one of the previously set calibration points, tap Rectify Offset then Rectify Aircraft Position, and tap OK.

8. Connection Routing enables the aircraft to rejoin a task route automatically and safely. It is recommended to mark all obstacles outside the task area during field planning. Users can add connection points where necessary to change the connection route to circumvent obstacles that were not marked during field planning. Refer to the descriptions below for more information.
9. Set operation parameters, tap OK, and tap Start.
10. Set an appropriate auto-takeoff height and speed by setting the Connection Routing and RTH Altitude and Connection Routing and RTH Speed, move the slider to take off, and start spraying.

- The Connection Routing and RTH altitude and speed can be adjusted under Pre-Task Auto Check and Aircraft Settings. If it is adjusted in one location, it will automatically be updated in the other location too.

- Only take off in open areas and set an appropriate auto-takeoff height according to the operating environment.
- The operation is automatically cancelled if the motors are started before beginning the operation. You will need to recall the operation in the task list.
- Once started, the aircraft flies to the starting point of the route and locks its heading in the direction of the first turning point for the duration of the flight route. During operation, users cannot control the aircraft heading via the control stick.
- The aircraft does not spray while flying along route spacing, but automatically sprays while flying along the rest of the route. Users can adjust the spray amount, flying speed, and the height above vegetation in the app.
- An operation can be paused by moving the control stick slightly. The aircraft will hover and record the breakpoint, and then the aircraft can be controlled manually. To continue the operation, select it again from the Executing tag in , and the aircraft will return to the breakpoint automatically and resume the operation. Pay attention to aircraft safety when returning to a breakpoint.
- Users can set the action the aircraft will perform after the operation is completed in the app.

Connection Routing

Connection Routing: refers to the procedure where the aircraft flies from the current position to the task route. Only available in Route operation mode.

Connection Routing returns the aircraft from its current position to the task route and automatically avoids any obstacles that were marked outside of the task area during field planning. Users can add connection points, which the aircraft must fly through on the connection route to circumvent the obstacles that were not marked during field planning. Connection Routing is only available in Route operation mode.

1. It is recommended to mark all obstacles inside or outside of the task area during field planning. After entering or resuming a Route operation, the connection route calculated by Connection Routing will be displayed on the map automatically.
2. Similar with the operation of crosshair for field editing, drag the map to align the crosshair to the desired position and tap Add Connection Point. Tap a connection point twice to delete. Multiple connection points can be added. The aircraft will fly through all the connection points in the order that they were added.

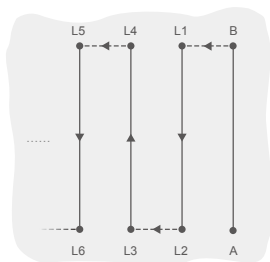
3. Tap OK and then Start, set the Connection Routing and RTH Altitude and Connection Routing and RTH Speed in Pre-Task Auto Check, and move the slider to start the operation. Connection Routing and RTH Altitude and Connection Routing and RTH Speed can also be set in Aircraft settings.
4. The aircraft flies along the connection route including through any connection points that have been marked along the way.

A-B Route Operation Mode

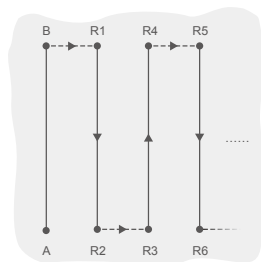
In A-B Route operation mode, the aircraft travels along a pre-planned route. Operation resumption, data protection, altitude stabilization, obstacle avoidance, and auto obstacle circumvention functions of the radar module are available in this mode. Use the app to adjust the flying speed and spray amount. A-B Route operation mode is recommended for large, triangular, or rectangular spray areas.

Operation Route

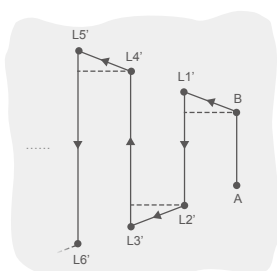
The aircraft travels along a planned square zig-zag route after recording turning points A and B. Under optimal working conditions, the obstacle avoidance and auto obstacle circumvention functions are available and the aircraft maintains the same distance from the vegetation. The length of the dotted lines, called route spacing, can be adjusted in the app. If users adjust the heading for points A and B after the points are recorded, the turning angles for the turning points of the operation route will change according to the preset heading for points A and B. The shape of the operation route will also change, for example, as Route L' and Route R' in the figure below.



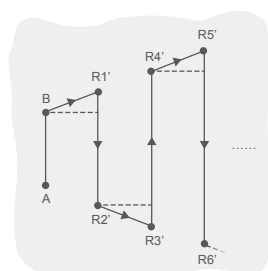
Route L



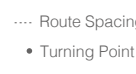
Route R



Route L'



Route R'



Legend

Operation Procedure

⚠
- Maintain VLOS of the aircraft at all times.
- Make sure that the GNSS signal is strong. Otherwise, A-B Route operation mode may be unreliable.

Make sure to inspect operating environments before flying.

Set the operation mode switch button to M (Manual operation mode) when a strong GNSS signal is present and the onscreen display is Manual Route (GNSS) or Manual Route (RTK). Fly the aircraft to a safe height.

1. Enter A-B operation mode
   Go to Operation View in the app, tap the operation mode switch button in the upper left corner, and select A-B operation mode.
2. Record Points A and B in order
   Fly the aircraft to the starting point, depicted as Point A or B, hover, and tap Point A or B onscreen or press the preset customizable button on the remote controller. Point A or B appears on the map after recording the starting points. If the heading for Point A or B is required to be adjusted, the heading for Point A should be adjusted after Point A is recorded and then users can record Point B and adjust the heading for Point B.

⚠
- Points A and B cannot be recorded if the spray tank is empty or the flying speed of the aircraft is higher than 0.4 m/s.
- Make sure to record Point A before Point B, and that the distance between Point A and B is more than 1 m.
- Update Point B by flying the aircraft to a new position to record. Note that if Point A is updated, Point B must be too.
- For optimal performance, it is recommended to keep the direction of Point A to B parallel to one side of the polygonal spray area.

3. Adjust heading for Point A and B
   After Point A or B is recorded, tap Adjust A or B Heading onscreen, and move the yaw stick on the remote controller. The heading of the aircraft refers to the heading for Point A or B that is indicated by a dotted line on the screen. Tap Adjust A or B Heading again to set the current heading for Point A or B. After adjusting the heading for Point A, Point B cannot be recorded inside of a range of 30° on the left or right of the dotted line indicating the heading for Point A. When adjusting the heading for Point B, the dotted line indicating the heading for Point B cannot be inside of a range of 30° on the left or right of the line from A to B. Take note of the prompts in the app when operating.

⚠ The heading for Point A or B cannot be set when the rotating speed of the aircraft's heading is higher than 15°/s.

4. Select the route
   After Point A and B are recorded, the app produces Route R or Route R' by default. Tap Change Direction on the lower right corner of the screen to switch to Route L or Route L'.

5. Set the operation parameters
   Tap Parameter Configuration on the left of the screen to set the spray amount, flight speed, route spacing, and height above the vegetation. Under optimal working conditions, the radar module starts working automatically and maintains the spraying distance between aircraft and vegetation after performing the operation.

The route spacing cannot be adjusted during operation. Switch to Manual operation mode to adjust the value, then return to A-B Route operation mode.

6. Performing an operation
   Tap Start on the lower right corner of the screen and move the slider to start the operation.

- If, after recording Points A and B, you fly the aircraft more than five meters away from Point B, Resume appears at the lower right corner of the screen. Tap Resume, and the aircraft automatically flies to Point B to perform the operation.
- If the GNSS signal is weak during the operation, the aircraft enters Attitude mode and exits from A-B Route operation mode. Operate the aircraft with caution. The operation can be resumed after the GNSS signal is recovered.
- If you press the A or B button during operation while the flying speed of the aircraft is lower than 0.3 m/s, the data for Points A and B of the current route is erased and the aircraft hovers in place.

- Users cannot control the aircraft heading via the control stick during the operation.
- When using the control sticks to control the aircraft in A-B Route operation mode, the aircraft automatically switches to Manual operation mode, completes the corresponding flight behavior, and then hovers. To resume the operation, tap Resume onscreen. The aircraft resumes flying along the operation route. Refer to Operation Resumption (p. 22) for more information.
- Even though the heading of the aircraft cannot be adjusted, use the control sticks to avoid obstacles if the obstacle avoidance function of the radar module is disabled. Refer to Manual Obstacle Avoidance (p. 23) for more information.
- During the operation, the aircraft does not spray liquid while flying along the route parallel to the line from A to B, but automatically sprays liquid while flying along the other parts of the route.

Manual Operation Mode

Tap the operation mode switch button in the app and select M to enter Manual operation mode. In this mode, you can control all the movements of the aircraft, spray liquid via the spray button of the remote controller, and adjust the spray rate via the dial. Refer to Controlling the Spraying System (p. 35) for more information. Manual operation mode is ideal when the operating area is small.

Manual Plus Operation Mode

Tap the operation mode switch button in the app and select M+ to enter Manual Plus operation mode. In this mode, the maximum flying speed of the aircraft is 7 m/s (customizable in the app), the heading is locked, and all other movement can be manually controlled. Users can disable the M+ heading lock in Parameters Configuration. Under optimal working conditions, the radar module maintains the spraying distance between aircraft and vegetation if the altitude stabilization function is enabled. Press

the corresponding buttons onscreen or customizable buttons on the remote controller (if customized) to steer the aircraft left or right. The aircraft automatically sprays when accelerating forward, backward or diagonally, but does not spray when flying sideward. Manual Plus operation is ideal for irregularly-shaped operating areas.

- The route spacing cannot be adjusted during operation. Switch to Manual operation mode to adjust the value, then return to Manual Plus operation mode.
- The spray rate will be adjusted automatically according to the flying speed.
- In the app, users can adjust the spray amount, flying speed and height above the vegetation.

Operation Resumption

When exiting a Route or an A-B Route operation, the aircraft records a breakpoint. The Operation Resumption function allows you to pause an operation temporarily to refill the spray tank, change the battery, or avoid obstacles manually. Afterwards, resume operation from the breakpoint.

Recording a Breakpoint

Users can record the location of an aircraft as a breakpoint. If the GNSS signal is strong, a breakpoint is recorded in the following scenarios during Route or A-B Route operations.

1. Tap the Pause or End button at the lower right corner of the screen. Note: tapping the End button during an A-B Route operation does not make the aircraft record a breakpoint. The operation ends immediately and cannot be resumed.
2. Initialize RTH.
3. Toggle the pause switch.
4. Push the pitch or roll stick in any direction on the remote controller.
5. Obstacle detected. The aircraft brakes and enters obstacle avoidance mode.
6. Radar module error detected when the obstacle avoidance function is enabled.
7. The aircraft reaches its distance or altitude limit.
8. Empty tank.
9. If the GNSS signal is weak, the aircraft enters Attitude mode and exits the Route or A-B Route operation. The last position where there was a strong GNSS signal is recorded as a breakpoint.

- Make sure that the GNSS signal is strong when using the Operation Resumption function. Otherwise, the aircraft cannot record and return to the breakpoint.
- The breakpoint is updated as long as it meets one of the above conditions.
- If the operation is paused for longer than 20 minutes during an A-B Route operation, the system automatically switches to Manual operation mode and erases the breakpoint.

Resuming Operation

1. Exit a Route or A-B Route operation through one of the above methods. The aircraft records the current location as the breakpoint.
2. Fly the aircraft to a safe location after operating the aircraft or removing the conditions for recording a breakpoint.

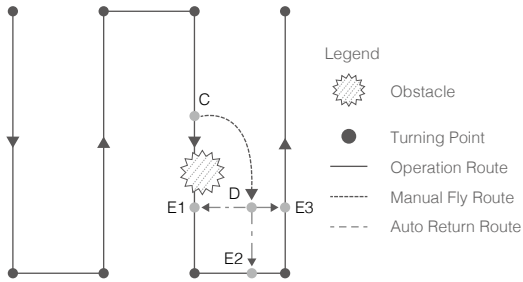
3. Return Route

   The default return route is to fly back to the breakpoint. Users can also select a return point from the list of return points on the screen, which means returning to the task route following a perpendicular line. To resume operations when the end button has been tapped to exit a Route operation, select the Executing tag in the operation list to use the operation again and select the return route.
4. Tap Resume in the lower right corner of the screen and the aircraft will fly to the task route by following the selected return route and continue spraying. Connection Routing can be used to return to the task route in Route operation mode.
5. If obstacle avoidance is required when returning to the route, users can enable the aircraft to move forward, backward, and sideward. Refer to Manual Obstacle Avoidance for more information.

Typical Applications

In Route or A-B Route operation mode, users can control the aircraft forward, backward, and sideward, avoiding obstacles along the operation route, or in an emergency such as when the aircraft is experiencing abnormal behavior. The following instructions describe how to avoid obstacles manually:

Manual Obstacle Avoidance



1. Exiting a Route or A-B Route operation

   In both modes, when using the control sticks to control the aircraft forward, backward, or sideward, the aircraft automatically switches the current mode to Manual operation mode, pauses the operation, records the current position as a breakpoint (Point C), completes the corresponding flight behavior, and hovers.

⚠ When pushing the control sticks to exit the operation, the aircraft requires a braking distance. Make sure that there is a safe distance between the aircraft and any obstacles.

2. Avoiding an Obstacle

   After switching to Manual operation mode, users can control the aircraft to avoid the obstacle from Point C to D.
3. Resuming Operation

   Select one of the three return points marked as E1, E2, or E3. Tap resume and the aircraft flies from the point marked D to the selected return point following a perpendicular line.

- The amount of selectable return points is related to the position of the aircraft. Select according to the app display.
- Make sure that the aircraft has completely avoided the obstacle before resuming operation.
- In the event of an emergency, make sure that the aircraft is operating normally and fly the aircraft manually to a safe area to resume operation.

Repeat the instructions above to exit and resume operation in the event of an emergency when returning to the route, such as whenever obstacle avoidance is required.

System Data Protection

In Route or A-B Route operation mode, the System Data Protection feature enables the aircraft to retain vital system data such as operation progress and breakpoints after the aircraft is powered off to replace a battery or refill the spray tank. Follow the instructions in Operation Resumption to resume the operation after restarting the aircraft.

During Route operations, in situations such as when the app crashes or the remote controller disconnects from the aircraft, the breakpoint will be recorded by the flight controller and recovered automatically in the app once the aircraft is reconnected. If recovery is not performed automatically, users can perform the operation manually. Go to Operation View, select , , then Advanced Settings, and tap Continue Unfinished Task. Recall the operation in the Executing tag in the operation list.

Spherical Radar System

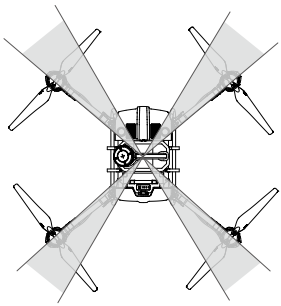
Profile

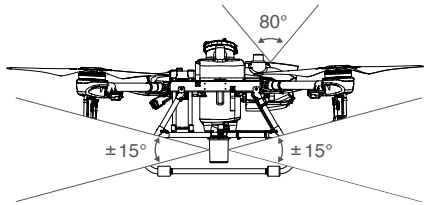
The Spherical Perception Radar System, consisting of the Omnidirectional Digital Radar and Upward Radar, works during day and night and is unaffected by light or dust. In an optimal operating environment, the omnidirectional digital radar can predict the distance between the aircraft and the vegetation or other surfaces in forward, backward, and downward directions to fly at a constant distance to ensure even spraying and terrain following capability. The radar system can detect obstacles in all horizontal directions from 30 m away and from 15 m above in the upward direction. It effectively senses the environment and helps to circumvent obstacles in both Route and A-B Route operation modes. In addition, the radar module limits the descent speed of the aircraft according to the distance between the aircraft and ground in order to provide a smooth landing.

The altitude stabilization and obstacle avoidance functions of the radar module are enabled by default and can be disabled in the app. When enabled, the aircraft flies above the vegetation at a constant spraying distance in Route, A-B Route, and Manual Plus operation modes. In Manual operation mode, the radar module can measure the spraying distance above the vegetation or other surfaces, but the aircraft is not able to fly at a constant spraying distance. Obstacle avoidance can be used in any mode. Auto Obstacle Avoidance is disabled by default. Users can enable it in the app.

Detection Range

The obstacle detection distance of the omnidirectional digital radar is 1.5-30 m while the upward radar has a detection distance of 1.5-15 m. The FOV of the system is shown in the figure below. The aircraft cannot sense obstacles that are not within the detection range. For the four gray areas in the figure, the detection performance of the radar module may be reduced due to the obstruction of the frame arms and landing gear. Fly with caution.





⚠ The effective detection distance varies depending on the size and material of the obstacle. When sensing objects such as buildings that have a radar cross section (RCS) of more than -5 dBsm, the effective detection distance is 20 to 30 m. When sensing objects such as power lines that have a RCS of -10 dBsm, the effective detection distance is approximately 15 m. When sensing objects such as dry tree branches that have a RCS of -15 dBsm, the effective detection distance is approximately 10 m. Obstacle sensing may be affected or unavailable in areas outside of the effective detection distance.

Omnidirectional Digital Radar Usage

Obstacle Avoidance Function Usage

Make sure the horizontal obstacle avoidance function of the radar module is enabled in the app. Obstacle avoidance is used in the following two scenarios:

1. The aircraft begins to decelerate when it detects an obstacle is 15 m away and brakes. While braking, users can not accelerate in the direction of the obstacle but can fly in a direction away from the obstacle. The aircraft will hover in place if the user does not perform any action. Fly in a direction away from the obstacle to regain full control of the aircraft.
2. The aircraft immediately brakes and hovers if it detects an obstacle nearby. Users cannot control the aircraft while it is braking. Users can fly in a direction away from the obstacle to regain full control of the aircraft.

Altitude Stabilization Function Usage

1. Make sure that you have enabled the altitude stabilization function of the radar module in the app.
2. Enter the desired operation mode, and configure the desired spraying distance.
3. If the operating environment is ideal, the aircraft flies above the vegetation at the preset height.

Obstacle Circumvention Function Usage

1. Make sure that you have enabled the horizontal obstacle avoidance function of the radar module in the app, and enable Auto Obstacle Avoidance. Note that Auto Obstacle Avoidance is disabled if Horizontal Obstacle Avoidance is disabled.
2. Perform a Route or A-B Route operation. During auto flight, when obstacles are detected, the aircraft plans a flight route to circumvent the obstacles.
3. The aircraft flies along the planned flight route to circumvent the obstacles. Once the obstacles are circumvented, the aircraft returns to the operation route.

4. The aircraft hovers in place if a prompt is received in the app indicating that the aircraft failed to circumvent the obstacle. Users can manually control the aircraft to avoid the obstacles. Refer to Manual Obstacle Avoidance (p. 23) for more information.

Upward Radar Usage

Make sure the upward obstacle avoidance function of the radar module is enabled in the app. Obstacle avoidance is used in the following two scenarios:

1. The aircraft begins to decelerate when it detects an obstacle is 3 m away and brakes and hovers in place.
2. The aircraft immediately brakes if it detects an obstacle nearby.

Users cannot accelerate in the direction of the obstacle, but can fly in a direction away from the obstacle when the aircraft is braking or hovering.

Radar Usage Notice

- DO NOT touch or let your hands or body come in contact with the metal parts of the radar module when powering on or immediately after flight as they may be hot.
- In Manual operation mode, users have complete control of the aircraft. Pay attention to the flying speed and direction when operating. Be aware of the surrounding environment and avoid the blind spots of the radar module.
- Obstacle Avoidance is disabled in Attitude mode.
- Obstacle Avoidance is adversely affected due to the obstruction of the aircraft body when aircraft pitch exceeds 15°. Slow down and fly with caution.
- When sensing objects that have a vertical inclination of more than 5° such as an inclined line or inclined utility pole, the sensitivity of the radar module may be reduced. Fly with caution.
- The radar module enables the aircraft to maintain a fixed distance from vegetation only within its working range. Observe the aircraft's distance from vegetation at all times.
- Operate with extra caution when flying over inclined surfaces. Recommended maximum inclination at different aircraft speeds: 10° at 1 m/s, 6° at 3 m/s, and 3° at 5 m/s.
- Maintain full control of the aircraft at all times and do not rely on the radar module and DJI Agras app. Keep the aircraft within VLOS at all times. Use your discretion to operate the aircraft manually to avoid obstacles.
- Comply with local radio transmission laws and regulations.
- The sensitivity of the radar module may be reduced when operating several aircraft within a short distance. Operate with caution.
- Before use, make sure that the radar module is clean and the outer protective cover is not cracked, chipped, sunken, or misshapen.
- DO NOT attempt to disassemble any part of the radar module that has already been mounted prior to shipping.
- The radar module is a precision instrument. DO NOT squeeze, tap, or hit the radar module.
- Land the aircraft on flat ground to avoid damage to the radar module from raised objects.
- DO NOT block the position on the aircraft shell where the upward radar is located underneath. Otherwise, upward obstacle avoidance may be affected.
- Make sure the position on the aircraft shell where the upward radar is located underneath is not cracked, chipped, or misshapen. Otherwise, upward obstacle avoidance may be affected.

- If the radar module frequently detects obstacles incorrectly, check to make sure the mounting bracket and the aircraft landing gear are properly secured. If the radar module still does not work, contact DJI Support or a DJI authorized dealer.
- Keep the protective cover of the radar module clean. Clean the surface with a soft damp cloth and air dry before using again.

Empty Tank

Profile

A prompt appears in the app and the aircraft hovers in place when the spray tank is empty. In Route, A-B Route, and Manual Plus operation modes the aircraft can also be set to ascend or RTH instead of hovering.

Usage

1. When an empty tank warning appears in the app, the sprinklers automatically turn off.
2. Make sure that the aircraft is in Manual operation mode. Land the aircraft and stop the motors. Refill the spray tank and tightly secure the cover.
3. Take off in Manual operation mode and fly the aircraft to a safe position. Enter the desired mode to continue the operation.

Return to Home (RTH)

Home Point: The default home point is the first location where your aircraft received strong GNSS signals. Note that the white GNSS icon requires at least four bars before the signal is strong.

RTH: RTH brings the aircraft back to the last recorded home point.

There are three types of RTH: Smart RTH, Low Battery RTH, and Failsafe RTH.

Smart RTH

Press and hold the RTH button on the remote controller when GNSS is available to enable Smart RTH. Both Smart and Failsafe RTH use the same procedure. With Smart RTH, you may control the altitude of the aircraft to avoid collisions when returning to the home point. Press the RTH button once or push the pitch stick to exit Smart RTH and regain control of the aircraft.

Low Battery RTH

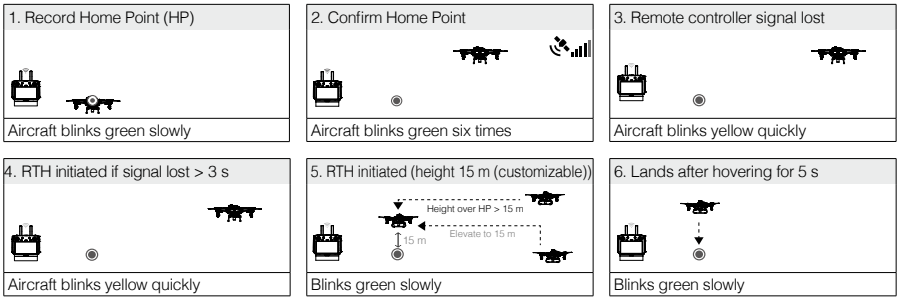
Low Battery RTH is only available in Route and A-B Route operations. If the Low Battery Action is set to RTH in the Aircraft Battery settings in the app, the aircraft will pause the operation and enter RTH automatically when the aircraft battery level reaches the low battery threshold. During RTH, users can control the altitude of the aircraft to avoid collisions when returning to the home point. Press the RTH button once or push the pitch stick to exit RTH and regain control of the aircraft.
The aircraft will not enter RTH if the Low Battery Action is set to Warning in the Aircraft Battery settings in the app.

Failsafe RTH

The aircraft will RTH or hover if the remote controller signal is lost. The action can be set in the app. Failsafe RTH will only be available if RTH is set.

Failsafe RTH is automatically activated if the remote controller signal is lost for more than three seconds, provided that the home point has been successfully recorded, the GNSS signal is strong and the RTK module is able to measure the heading of the aircraft. The RTH continues if the remote controller signal is recovered, and users can control the aircraft using the remote controller. Press the RTH button once to cancel RTH and regain control of the aircraft.

RTH Illustration



If RTH is triggered during Route operations, the aircraft can plan a flight path for RTH to circumvent the obstacles added when planning a field.

Updating the Home Point

You can update the home point in DJI Agras during flight. There are two ways to set a home point:

1. Set the current coordinates of the aircraft as the home point.
2. Set the current coordinates of the remote controller as the home point.

Make sure the space above the remote controller's GNSS module (located inside the place above the flight switch mode) is not obstructed and that there are no tall buildings around when updating the home point.

Follow the instructions below to update the home point:

1. Go to DJI Agras and enter Operation View.
2. Tap , then , and select in Home Point Location settings to set the current coordinates of the aircraft as the home point.
3. Tap , then , and select in Home Point Location settings to set the current coordinates of the remote controller as the home point.
4. The aircraft status indicators blink green to indicate that the new home point has been set successfully.

